

ANNUAL WATER QUALITY REPORT

Reporting Year 2022

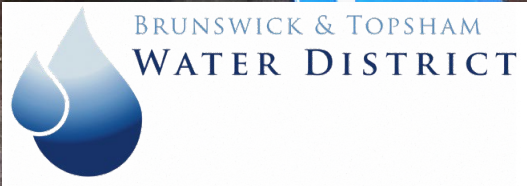
Brunswick & Topsham Water District
Holden Treatment Station
Dedicated September 22, 2022

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Presented By





Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Where Does My Water Come From?

Our sources of supply are groundwater wells:

- Holden Station, Topsham: one 24-inch-diameter well, one 18-inch-diameter well
- Jordan Avenue Station, Brunswick: 135 2.5-inch-diameter wells
- Taylor Station, Brunswick: one 24-inch-diameter well, one 18-inch-diameter well, and one 12-inch-diameter well
- Williams Station, Brunswick: one 12-inch-diameter well



Our distribution system includes approximately 120 miles of water main, two storage tanks, 7,400 services, and 1,000 private and public hydrants. In 2022 we delivered an average of 2.03 million gallons of water per day to our customers. May 13 was our highest demand day, in which we delivered 3.15 million gallons of water.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by



Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Source Water Assessment Program

In 1996 amendments to the federal Safe Drinking Water Act required each state to complete assessments for each public water supply source. The assessments identify and describe conditions that may threaten the quality of water available to consumers. These assessments are the focus of Maine's Source Water Assessment Program (SWAP). The State of Maine Drinking Water Program (DWP) completed its SWAP report for the Brunswick and Topsham Water District in 2003. The report was sent to municipal officials in Brunswick and Topsham. The report can be viewed by contacting the Brunswick and Topsham Water District.

The responsibility for protecting public water supply sources from contamination falls largely to the public water suppliers. But municipal officials, not water suppliers, make land-use decisions. This means that protection of public water supplies requires a partnership between water suppliers, state and federal regulators, local landowners, and municipalities.

Categories of risk evaluation for public water sources include well type and site geology, existing and future risk of acute contamination, and existing and future risk of chronic contamination. The following is a summary of the assessment provided by the DWP. If you have any questions or comments, feel free to call the Brunswick and Topsham Water District at (207) 729-9956 Monday to Thursday, from 7:00 a.m. to 5:00 p.m.

The DWP has assessed the risk of all our water sources, based on type and geology, as moderate. The only practical means of reducing risk is through replacement of the source. Acute contaminants, such as pathogens, nitrates, and nitrites, are those that can make people sick immediately after being consumed. DWP has assessed all our sources as low risk for existing and future acute contamination. Chronic contaminants are those that pose a health risk if consumed over many years. DWP has assessed our sources as, on average, moderate risk for existing and future chronic contamination

QUESTIONS?

If you have any questions or comments about this report or any other aspect of our operations, please contact Craig W. Douglas, P.E., General Manager, at (207) 729-9956 (phone), (207) 725-6470 (fax), or cwdouglas@btwater.org (email).

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

How Is My Water Treated and Purified?

At all our sources, we add sodium hypochlorite (chlorine) to protect against bacteriological contaminants and fluoride to promote dental health. We also add a phosphate compound to inhibit corrosion of the distribution system piping and reduce lead and copper corrosion of internal plumbing systems. The water from the Jackson and Taylor wells is filtered to remove iron and manganese caused by erosion of natural deposits in the sand-and-gravel aquifer. The pH of the water from the Jordan Avenue well field is adjusted using aeration to reduce the corrosivity of the water.

How To Learn More about Your Water

This report highlights some of our activities during the past year. There are many ways to get the information you need:



- Visit our website, www.btwater.org, or email info@btwater.org.
- Like us on Facebook: Brunswick & Topsham Water District.
- Attend a board meeting on the second Monday of the month at 5:30 p.m.
- Call the office at (207) 729-9956, Monday to Thursday, between 7:00 a.m. and 5:00 p.m.

In case of emergency after normal business hours, please call (207) 729-9956, and the answering service will contact the appropriate personnel. A technician will return your call as soon as possible.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or online at: www.epa.gov/safewater/lead.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2021	10	0	1.8	NA	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Chlorine (ppm)	2022	[4]	[4]	NA	0.03–1.75	No	Water additive used to control microbes
Combined Radium (pCi/L)	2020	5	0	0.3	NA	No	Erosion of natural deposits
Combined Uranium (ppb)	2021	30	NA	2.3	NA	No	Erosion of natural deposits
Fluoride (ppm)	2022	4	4	0.72	NA	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 1 (ppb)	2022	60	NA	29.25	5.3–56	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.73	NA	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radon (pCi/L)	2022	4,000	300	774	NA	No	Naturally occurring in some drinking water sources
Total Coliform Bacteria (positive samples)	2022	TT	NA	0	NA	No	Naturally present in the environment
Total PFAS (ppt)	07/18/2022	20	0	ND	NA	No	Human-made chemicals in a wide variety of consumer products and industrial applications; stain- and water-resistant fabrics, carpeting, nonstick cookware, cleaning products, and paints; Class B firefighting foam (AFFF); industrial processes
TTHMs [total trihalomethanes]–Stage 1 (ppb)	2022	80	NA	38.05	13–82	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.33	0/36	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2022	15	0	ND	0/36	No	Corrosion of household plumbing systems; erosion of natural deposits

MINERAL CONTENT AND SECONDARY STANDARDS

SUBSTANCE (MGL)	MAINE RECOMMENDED LIMIT	RESULTS	RESULT RANGE
Chloride	250	65 ppm	25-72
Hardness	150	40-50	10-61
Iron	0.3	0.082 mg/L	<0.01-0.1
Manganese	0.05	0.0035 ppm	0.001-0.007
Sodium	100	23.9 ppm	11-50
Magnesium	50	5.7 ppm	2.2-6

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Introducing the Holden Station

The Holden Station was dedicated on September 22, 2022, with over 150 people at the open house and multiple TV stations covering the event. The public is welcome to tour the main lobby during normal business hours. The lobby has displays that highlight ongoing projects and a small but growing museum displaying pieces of waterworks history. Tours of the full facility can be requested by filling out the tour request form at www.btwater.org.



PFOS/PFOA Update

This is our fourth year of dedicating space in the annual report to this important topic. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) remain in the headlines across the country, region, and locally. The general group of chemicals is called per- and polyfluoroalkyl substances (PFAS). Of our three water sources, Jordan Station has been our primary concern. The district is presently in negotiations with the Department of Defense and the U.S. Navy to construct a permanent treatment facility at the Jordan Station so we can return the facility to full service.

When the district initially sampled for these substances in 2015 and 2016 in cooperation with the U.S. Navy, tests did not detect these substances. At the time, the detection limit was only 20 parts per trillion (ppt), and there was a limited scope of PFAS chemicals that could be tested. Since that time, approximately two more compounds have been added every year to the test method. In 2019 the detection levels were improved, allowing these compounds to be detected at 2 ppt. Fast forward to 2022, and there were rumors throughout the country that the U.S. EPA would drop the health advisory from 70 ppt to single digits. On March 14, 2023, the U.S. EPA proposed a limit of 4 ppt. Maine presently has an enforceable limit for PFAS6 of 20 ppt.

The Jordan Avenue well field was shut down for nearly 10 months while the district permitted and constructed a treatment system to protect the upper well field from PFAS in the lower field. A treatment system for the lower field had to be built because if the lower field had been simply shut off, PFAS would have migrated to the upper well field. Our last round of sampling for PFAS6 in 2022 resulted in no detections above the laboratory limit of 2 ppt at the Taylor and Holden Stations and 10.8 ppt at Jordan Station, which is below the Maine limit of 20 ppt, but not where we want to be.

For 2023 we have a target of less than 2 ppt at all three of our stations. Every year we have added more testing and learned more about how this contaminant is moving in our aquifers. We also received a \$463,000 grant for emerging contaminants to help offset the costs of the treatment and extensive sampling program that the district has undertaken over the past four years to address the community's PFAS concerns.

Just so people can appreciate what a trillion is, a trillion seconds ago was 29,665 B.C. Stated another way, one trillion is 0.0025 second in a 78-year lifespan. We are talking about very, very small things!

Additional resources:

<https://www.btwater.org/pfas-pfoa>

<https://www.btwater.org/water-quality-report>

Questions or comments can be emailed to info@btwater.org.